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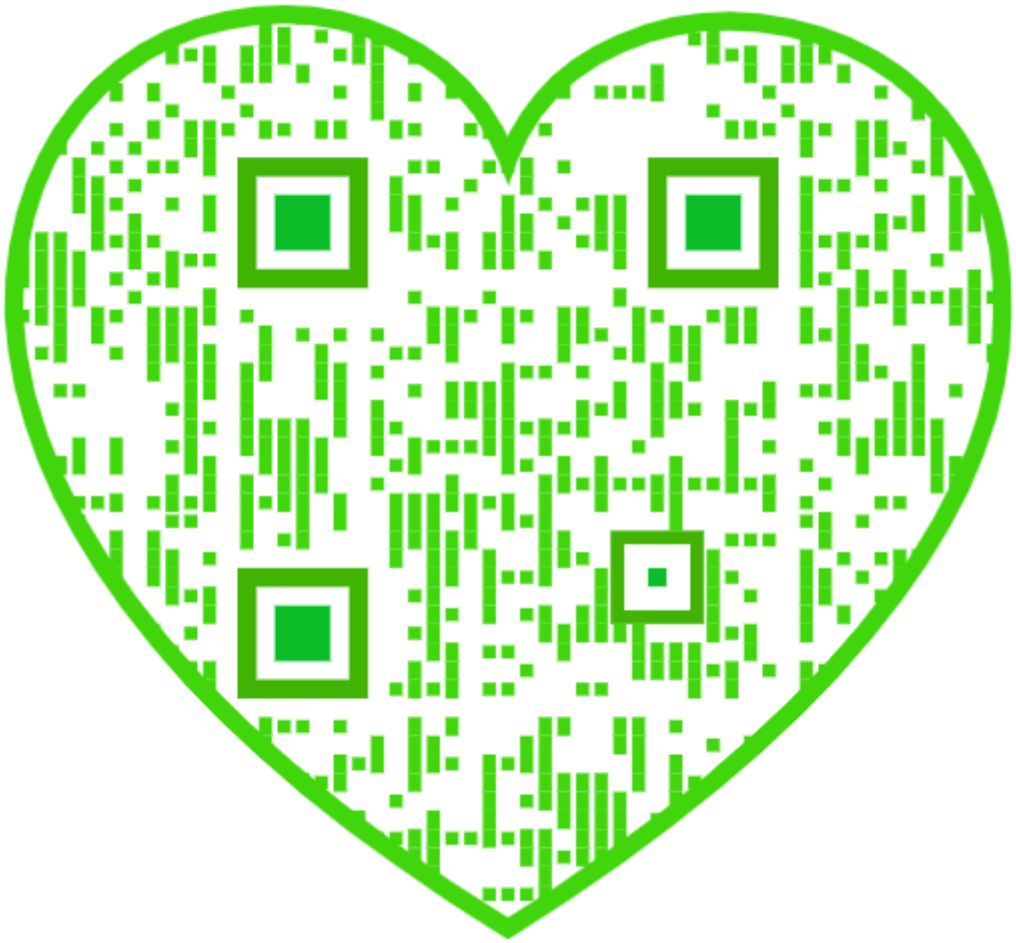
The story of the cattle fever tick

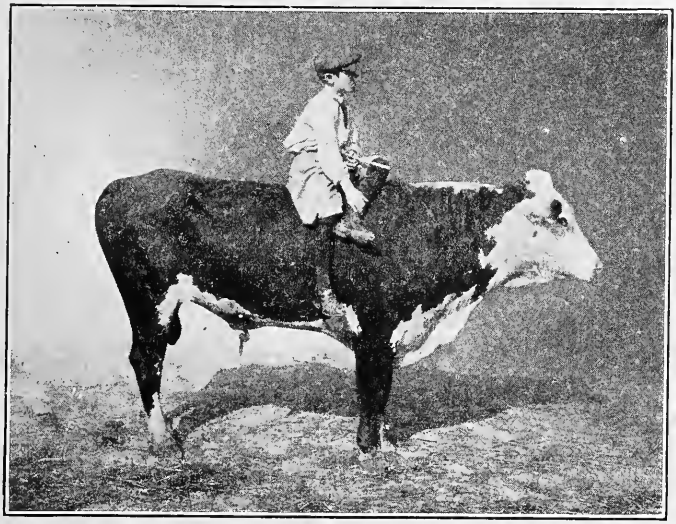


Class _____

Book _____

THE STORY OF THE CATTLE FEVER TICK

What Every Southern Child
Should Know About
Cattle Ticks



WASHINGTON
GOVERNMENT PRINTING OFFICE
1922

THE STORY OF THE CATTLE FEVER TICK

What Every Southern Child
Should Know About
Cattle Ticks

A picture book which shows how the fever ticks steal milk, meat and money from farmers and kill thousands of their cattle

U. S. DEPARTMENT OF AGRICULTURE
WASHINGTON, D. C.
1922

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Revised in 1922

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BUREAU OF ANIMAL INDUSTRY

June 12, 1922.

DEAR CHILDREN OF THE SOUTH:

This story book tells you why so many cows and steers and calves in the South get sick and die. I know that you would rather see fat, healthy cattle than thin and sick ones. Most cattle that die of sickness in the South die from the bites of cattle-fever ticks. The ticks carry tick fever from sick animals to healthy ones. Other names for tick fever are "redwater" and "murrain." Some cattle that the ticks bite do not die, but the fever ticks prevent them from giving as much milk or growing into as good meat animals as they otherwise would.

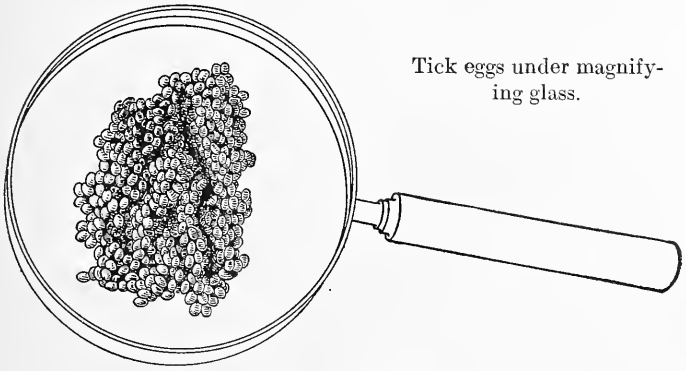
This story book tells how to get rid of these robber ticks that bite cattle and suck their blood. The best way to fight ticks is to build dipping vats and make the cattle swim through a medicine that kills the ticks. The medicine doesn't hurt the cattle at all. In many counties people have gotten rid of ticks that way and now are sending to market the milk and meat that the ticks used to steal.

Get your father and mother to read this story book and to help fight cattle-fever ticks. I hope you will like this little book and show it to your friends.

Chief, Bureau of Animal Industry.

THE STORY OF THE CATTLE FEVER TICK.

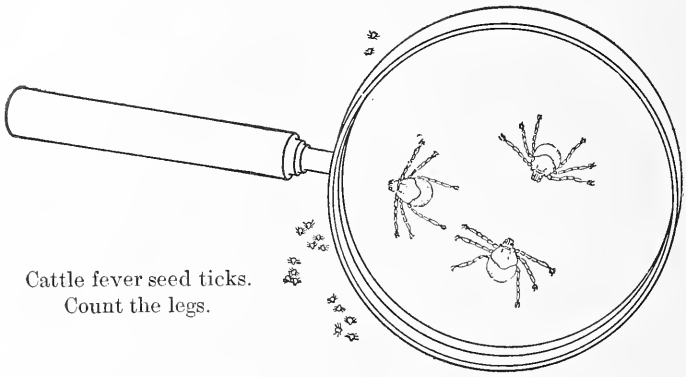
ONE warm summer day an olive-green cattle fever tick laid 4,000 tiny eggs in the grass on a southern farm. These eggs were waxy brown in color and were not much larger than a turnip seed. Here is a picture of the tiny eggs:



Tick eggs under magnifying glass.

These little eggs were kept warm by the sun. In less than a month they hatched out into lively, hungry seed ticks. Each seed tick was smaller than the head of a pin. If you had looked at these ticks

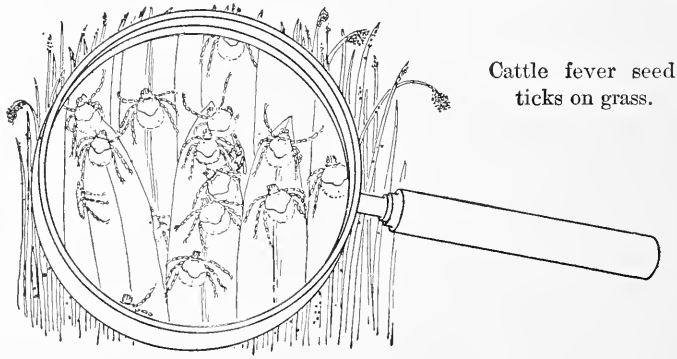
through a magnifying glass you would have seen that they had six legs.



Cattle fever seed ticks.
Count the legs.

These tiny seed ticks were very hungry. They wanted to get some blood from a cow or steer or calf. Blood is the only food they can eat.

The hungry baby ticks crawled to the tips of the grass and to the tops of weeds and bushes. They waited there for an animal to pass by. This picture shows the baby ticks on the grass lying in wait for a cow or calf or steer.



Cattle fever seed ticks on grass.

A cow walked slowly by the spot where the little ticks were hiding.

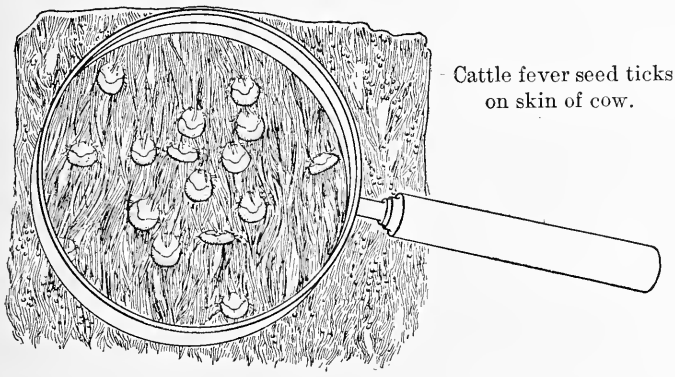
The ticks smelled blood and got ready to get on the cow.

Many of the seed ticks were able to get on her tail or her neck or her legs.

Every baby tick on the cow began to hunt for a thin place in her hide.

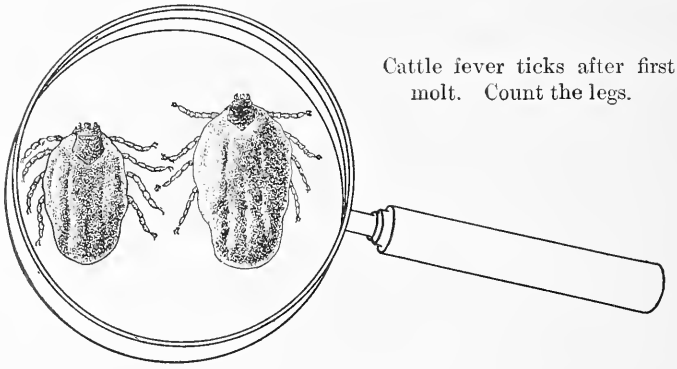
As soon as each tick had found a tender spot, it began to bury its head in the hide. It was digging a tiny well to the blood in the cow.

Here are seed ticks driving their little wells to the blood in the cow:



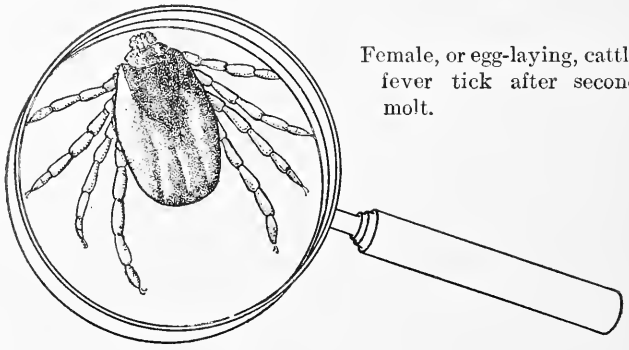
Cattle fever seed ticks on skin of cow.

When the baby ticks got their first taste of blood, they began to suck blood as fast as they could. Every day they grew a little larger. They sucked blood and grew for about a week. Then they shed their skins, which is called molting, and became little 8-legged ticks.

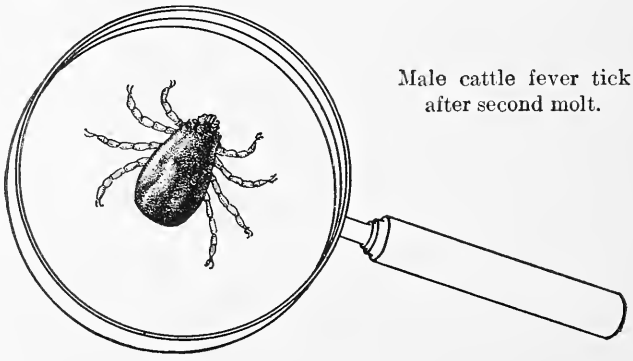


Cattle fever ticks after first molt. Count the legs.

The little 8-legged ticks sucked blood again and kept on growing until they changed or molted a second time. After the second molt they looked like this:



Female, or egg-laying, cattle fever tick after second molt.



Male cattle fever tick after second molt.

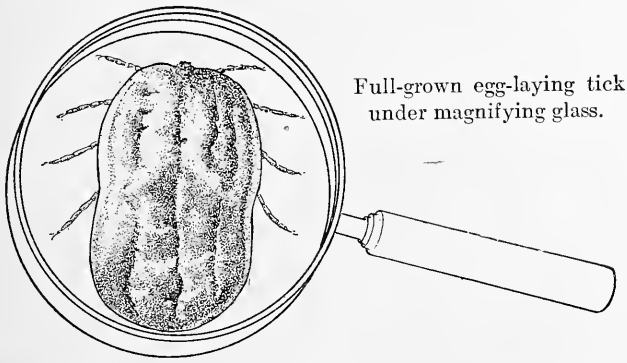
After this second change some of the ticks had become brown male ticks. The others had become egg-laying ticks. The egg-laying ticks at first were not much larger than the brown male ticks. The brown male ticks did not grow any more. But the egg-laying ticks grew larger and larger, and the larger they grew the more blood they sucked from the cow.

They made bigger wells in the hide so that they could get blood faster.

Each of these wells or tick bites makes a sore spot and a mark in the leather made from the hide. (See illustrations on page 10.)

The egg-laying ticks got so big and fat that they looked like tiny blood sausages, or little balloons. Each tick kept itself full of blood all the time. If you had crushed one of them, you would have seen the blood in it. The male ticks stay brown, but the egg-laying ticks, when they are fat, are olive-green.

The big, olive-green, egg-laying ticks look like this:



Full-grown egg-laying tick under magnifying glass.

The ticks sucked so much blood that the cow became thin and scrawny. The cow was making blood out of feed as fast as she could. But she could not make blood fast enough to feed the ticks and at the same time keep well and strong and fat herself.

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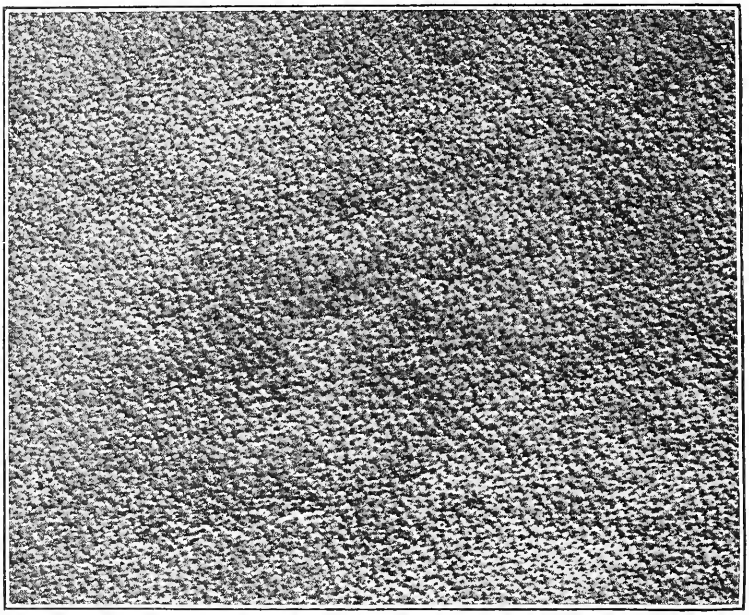
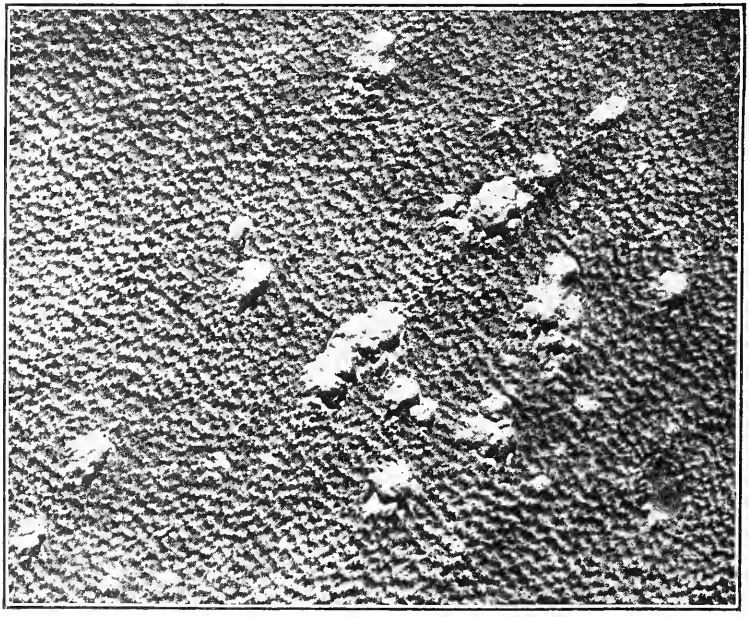


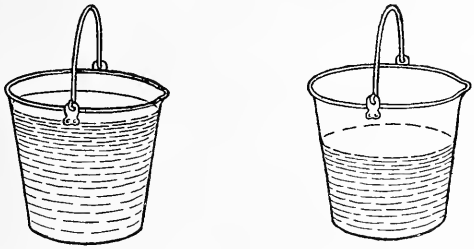
Leather made from a hide not bitten by ticks.



Poor, rough leather from a tick-bitten hide.

You can see why a tick-bitten hide is worth from 75 cents to $1.50 less than one not full of tick holes and spots.

The ticks got a lot of the blood that the milk cells of the udder needed for making milk. The cow's milk fell off nearly two quarts a day.

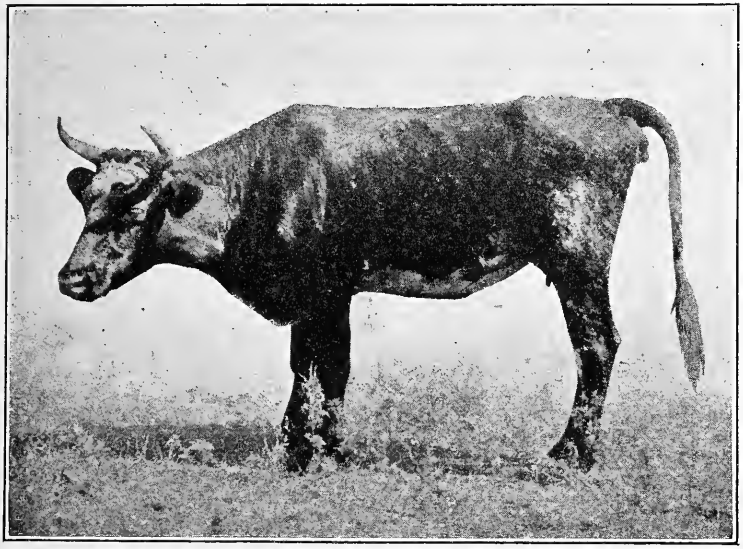


Ticks steal milk. Many ticks on a cow may reduce her milk two quarts a day.

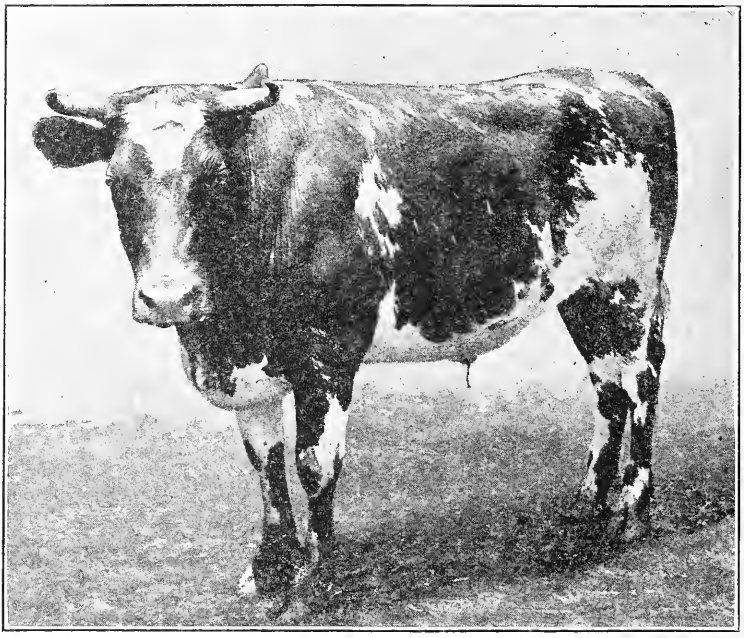
The ticks also got a lot of the blood that should have gone into meat and fat on the cow.

She was so thin that the butcher would not buy her to kill for meat.

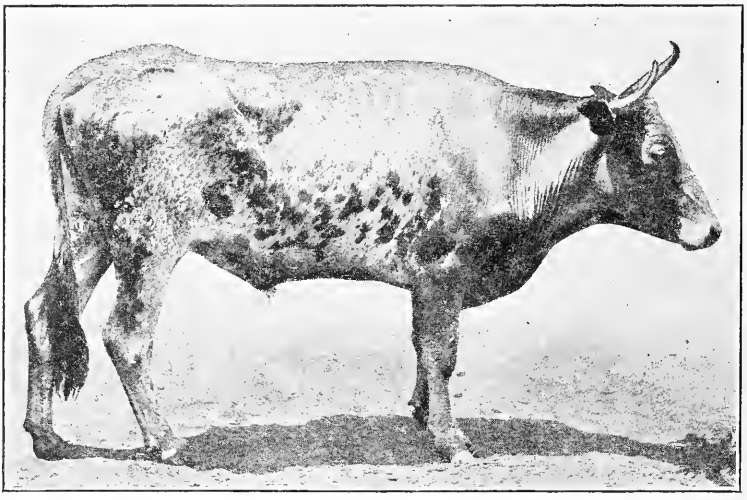
Her owner wondered why she ate so much costly feed and gave so little milk and did not grow fat.



The fever ticks have kept this cow from turning much of her feed into milk and flesh.



This steer was not sucked thin by ticks. All his feed went to make beef and fat and bone.



This steer had to feed ticks as well as himself. His feed went largely to fatten ticks.

Which steer would you choose if you were the butcher?

The reason was that a large part of the feed she was eating did not help her, but was wasted in feeding the blood-sucking ticks.

If these ticks had gotten on a steer they would have sucked from it blood that should have gone to help it grow into a fine, heavy, fat beef animal.

If the ticks had gotten on a calf they would have sucked so much blood from it that the calf could not grow into a strong, healthy cow or steer.

You can see that wherever there are ticks the cattle owner will have less milk and butter and meat to send to market. He will have to waste a lot of feed in feeding ticks which do no good at all and hurt or kill his stock.

THE TICKS START A NEW FAMILY.

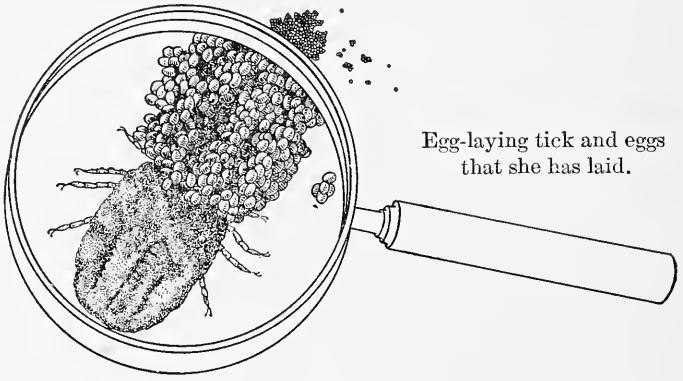
The brown ticks and the egg-laying ticks kept on sucking blood until they could eat no more. The brown ticks ate a great deal, but they did not grow. The egg-laying ticks became olive-green in color as they grew fatter and fatter.

The brown ticks at last dropped off the cow and died. They had finished their short, but harmful, lives.

The olive-green, or egg-laying, ticks had used the blood from the cow to grow fat themselves and also to store up eggs in their bodies. When they had eaten all the blood they could use, the egg-laying ticks dropped off the cow into the grass. There, each laid 4,000 to 5,000 eggs. Having started a new blood-sucking family, the green ticks died.

The eggs hatched into more hungry ticks to crawl on the cattle and to suck more blood.

If only we could find and destroy all these tiny eggs laid in the grass, we could keep the seed ticks from hatching out. But no one can hope to find all these tiny eggs that are in a ticky pasture.



Egg-laying tick and eggs that she has laid.

The easiest and surest way to get rid of ticks is to kill them while they are on the animal and before they have a chance to lay eggs in the grass.

Ticks can be killed on cows, steers, calves, and horses by making the animals swim through a dipping vat full of a medicine which kills the ticks.

HOW TICKS KILL CATTLE.

The owner of the cow on which the ticks had been feeding saw that she was getting sick. She was very thin and weak and feverish. The doctor looked at her. He said: "The cow is dying of tick fever." Tick fever is also called redwater, murrain, and splenetic, southern, or Texas fever. The cow got so weak it could not get up on its legs. At last it died in the pasture. The cow had cost $40, and the owner lost all this money.

HOW CATTLE GET TICK FEVER.

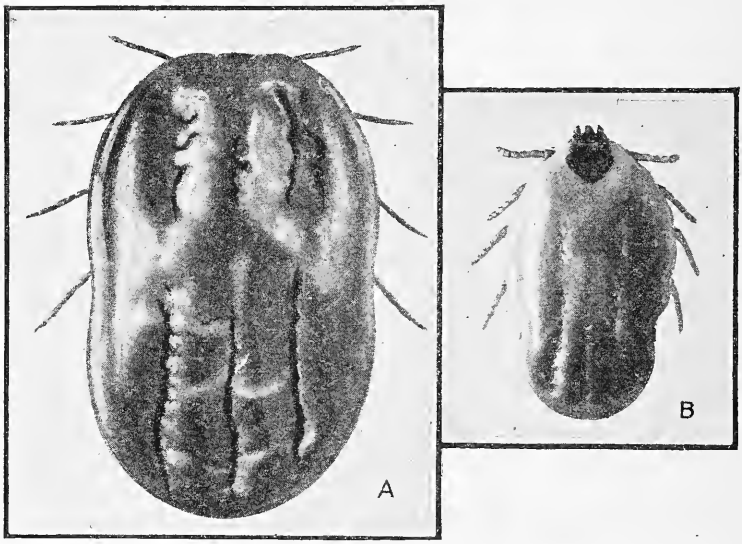
Cattle get tick fever from being bitten by a fever tick, and in no other way. They can not catch it from the air, nor the feed they eat, nor the water they drink. They do not get it by being near another animal which has the fever.

No other kind of tick than the cattle-fever tick carries this fever. The wood ticks which sometimes get on children, and the ticks we find on dogs, rabbits, chickens, turtles, and many other animals, do not carry tick fever. These other kinds of ticks sometimes get on cattle and annoy them, but they *do not* and *can not* give tick fever to the cattle.

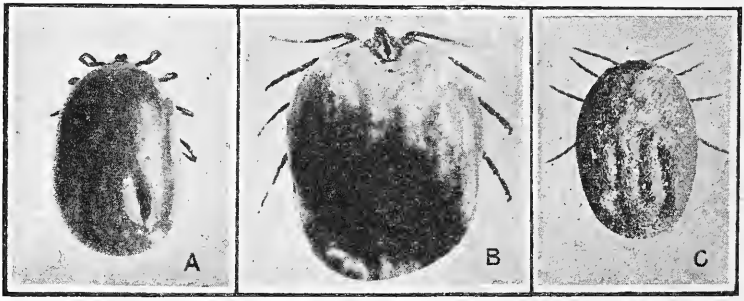
The fever tick carries cattle fever from a sick animal to a well animal. It carries this disease much as certain kinds of mosquitoes carry malaria or yellow fever from one human being to another.

But the ticks do not carry this fever straight from a sick animal to a well one. Once a tick has got

This cow is dying with tick fever.



These are fever ticks. A, Full-grown female; B, young fever tick after first molt. The pictures are much larger than real ticks.



These ticks, found on dogs and other animals, do not give tick fever to cattle. A, American dog tick; B, Gulf coast tick; C, brown dog tick. (Enlarged.)

on an animal it does not leave that animal until it drops off to die or to lay eggs. So live ticks do not pass from one cow or steer to another.

How do the fever ticks carry tick fever from a sick animal to a well animal? The tick that is sucking blood from a sick animal gets the germs of this fever in the blood it eats. These fever germs stay in the tick's body and get into its eggs. The germs

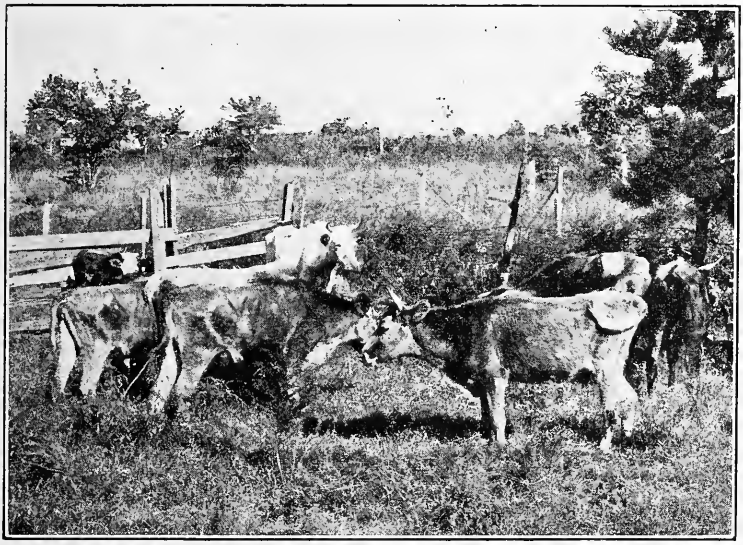
in the egg get into the body of the baby tick before it hatches out. The baby tick after it hatches out carries these germs with it when it gets on a cow or steer or calf in search of blood.

When the tick bores its well into the hide it lets some of these fever germs get into the blood of the animal. These germs spread through the blood of the cow or steer or calf and make it sick with tick fever.

Sometimes these germs do not make the animal very sick. Such animals do not die of fever. But in many cases the germs make the cattle very sick and kill them.

Thousands of cows and steers and calves are killed every year in the South by this tick fever carried by ticks.

Many animals that do not die of the fever are weak and scrawny and sickly for the rest of their lives.



The kind of cattle the fever tick lets live.

The fever and the loss of the blood that the ticks suck out weaken many animals so that they can not stand winter storms. They die of exposure or starvation. Many of these would not die if the fever ticks had not weakened them.

Many cows are made so weak by the fever and the loss of the blood the ticks suck that they can not care for their baby calves in the spring. Many calves die at this season.

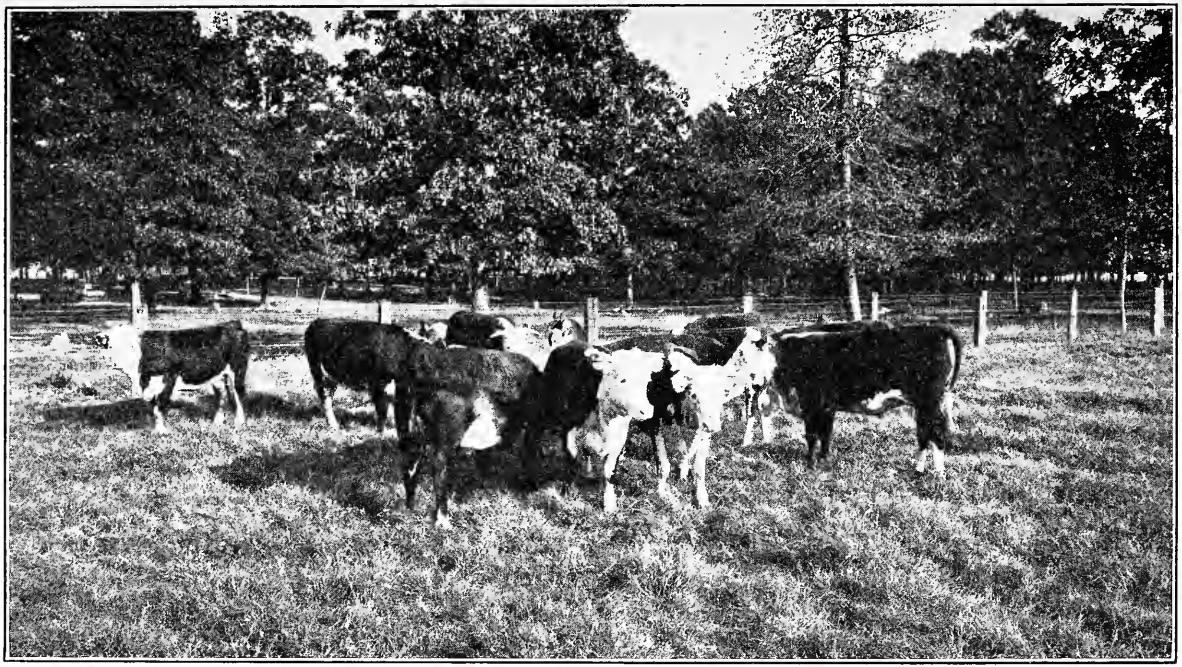
It is called "spring loss," and costs cattle raisers a lot of money.

Cattle owners could save these losses by killing the fever ticks.

AN ENEMY OF FINE CATTLE.

Cattle brought into the South from places where there are no fever ticks get tick fever very easily and are almost sure to die from it. This is why good, tick-free breeding animals can not be brought to a ticky farm to improve the breed of the cattle. The fever ticks are almost sure to kill good milk cows, good bulls, or good beef cattle brought in from tick-free places. Fine animals are so valuable that a farmer can not afford to keep them if ticks suck out their blood and keep them from being healthy.

This is why we see so many scrawny cattle where there are ticks. In ticky country we do not see herds of fine, fat, grade, or purebred stock. But where the tick has been killed in the South you will see fatter and better cattle on almost every farm.



Where the fever ticks have been driven out, southern farmers are beginning to raise cattle like those shown. The cows give more milk. The steers make more meat from their feed. The calves are worth more money.

GETTING RID OF TICKS HELPS A COUNTY.

You can see that it is a very good thing for cattle owners to get rid of ticks. Without ticks they have more milk and meat to sell. Their cattle do not die of fever. They can raise more cattle. They can raise better kinds of cattle. They get full returns from their feed. They make more money.

Getting rid of fever ticks is a good thing also for all the business men of the county. If cattle raisers and dairymen have more milk and meat to sell, they will have more money to spend in the stores for clothes and groceries and machinery. They will have more money to put into the banks. When there are no ticks, the cattle raisers get more money for their beef cattle at the big cattle markets. This brings more money from the outside into the county. When more money comes into the county, the people of the county are more prosperous. There is more business and more work for them. Everyone gets a share of the extra money.

A MEDICINE WHICH KILLS TICKS.

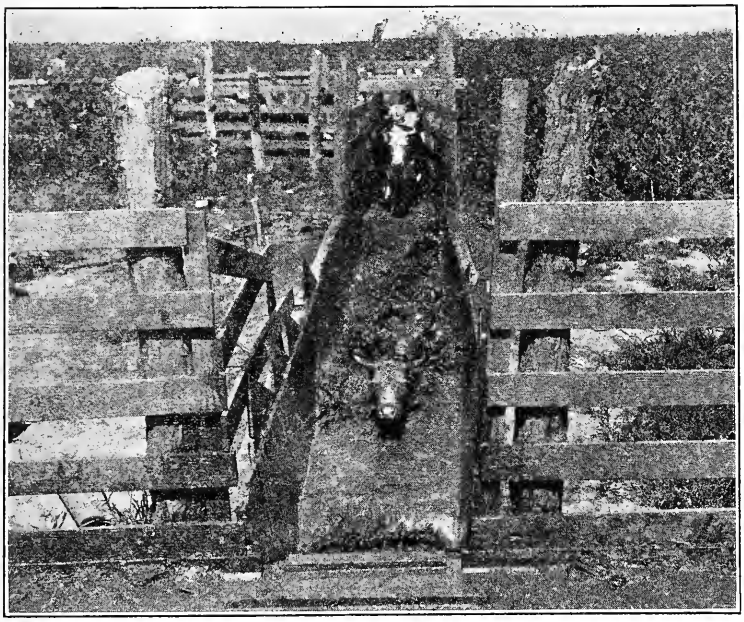
It is easy to get rid of cattle fever ticks. It does not cost much money nor take very much time or trouble. It is worth doing.

The United States Department of Agriculture has found a sure and simple way to kill all of the fever ticks in a county.

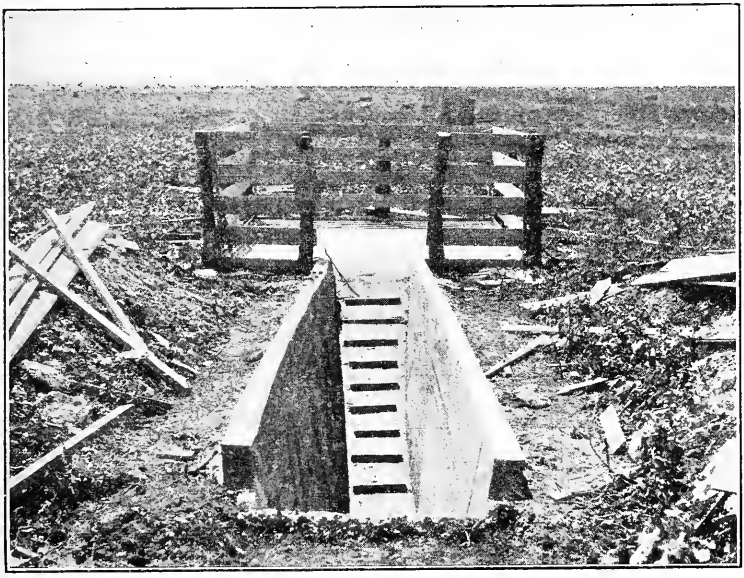
It has made a medicine called an arsenical bath. This medicine kills all the ticks that are wet with it.

The easiest way to wet the ticks is to make the cattle swim through a vat filled with this medicine.

To make a vat, the people first dig a deep, long trench. They line this trench with concrete and



When the cattle swim through this vat, the medicine kills the ticks.



This shows how the vat is built.

cement, so that it will hold water. Then they fill the vat with water and put the arsenic and other medicines into the water. This makes what is called an "arsenical dipping solution."

The cattle are driven to the vat and made to swim through the medicine.

The medicine does not hurt the animal, but kills all the seed ticks, male ticks, and egg-laying ticks that are on it.

Dipped animals trapping baby ticks.

After the cattle have been dipped they are driven back to their pastures.

The cattle become traps for the seed ticks in the grass and for the little ticks that will hatch out from the eggs already in the grass.

The seed ticks in the pasture crawl up on the animals after they have been dipped. In two weeks the animals are given another swim through the medicine. The medicine kills all the young ticks

that have gotten on the cattle. The ticks are killed before they have had a chance to make any eggs or suck much blood.

Then the animals go back to pasture again and trap still more seed ticks. After the animals have been dipped in the medicine every two weeks all spring and summer there will be no more ticks to lay eggs. There will be no more eggs left to hatch out a fresh crop of seed ticks. All the ticks that have been trapped by the cattle have been killed by dipping. All the little seed ticks that did not get on the cattle have starved to death.

EVERY ANIMAL MUST BE DIPPED.

Where the people of a county see that every cow, calf, steer, horse, mule, and colt is dipped regularly during the spring and summer, they will get rid of the ticks in their county in a single year. All the cattle in the county must be dipped. It will not do to dip some cattle and let others go undipped. The undipped cattle will spread egg-laying ticks along the roads and in the free pastures and woods. The eggs which these ticks lay will hatch into seed ticks that will get on undipped cattle. Those that do not get on cattle during the dipping season may still be alive in the pasture in the fall. They may then get back onto the dipped cattle when it is too cold to dip cattle again in the medicine.

Every cow, steer, or calf that is not dipped in the medicine regularly is liable to carry and spread ticks wherever it goes. So long as there are any ticks alive on any of the cattle the county can not get entirely rid of ticks.

HORSES AND MULES ALSO MUST BE DIPPED.

Fever ticks sometimes hide on horses and colts and mules. They do not cause fever in these animals. The few ticks that are on horses and mules must be killed or the seed ticks which hatch from their eggs will get on cattle. Therefore, it is necessary to make horses and colts and mules, as well as cattle, swim through the medicine.

IT PAYS TO DIP CATTLE.

It does not cost any one much money to dip the animals. All the people of the county help pay for the vats, the medicine, and for the dipping inspectors.

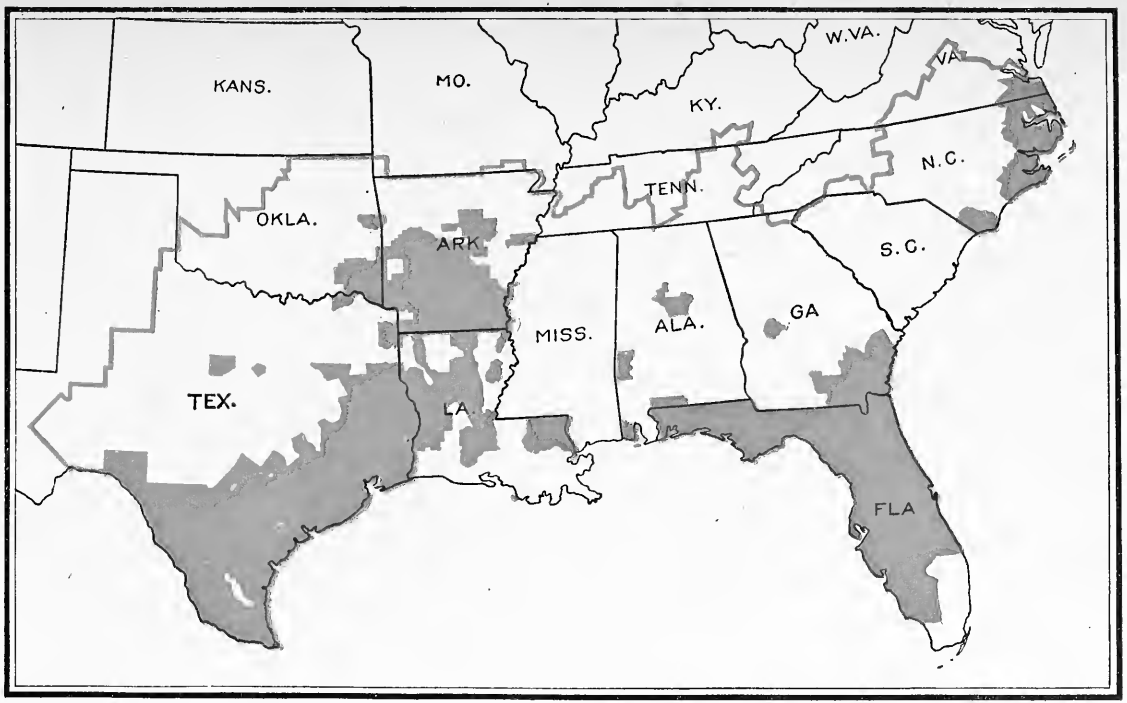
Where people want to get rid of the ticks the United States Department of Agriculture, without cost to the county, will send trained men to help the county build vats, mix the medicine, and dip the cattle.

The extra money the people will make from their cattle will pay them back many times for the money they spend for dipping. The extra money will pay farmers well for all the time they use in driving their cattle to the vats.

MANY COUNTIES ALREADY FREED FROM TICKS.

The people in hundreds of counties in the South already have gotten rid of ticks by using this medicine in dipping vats.

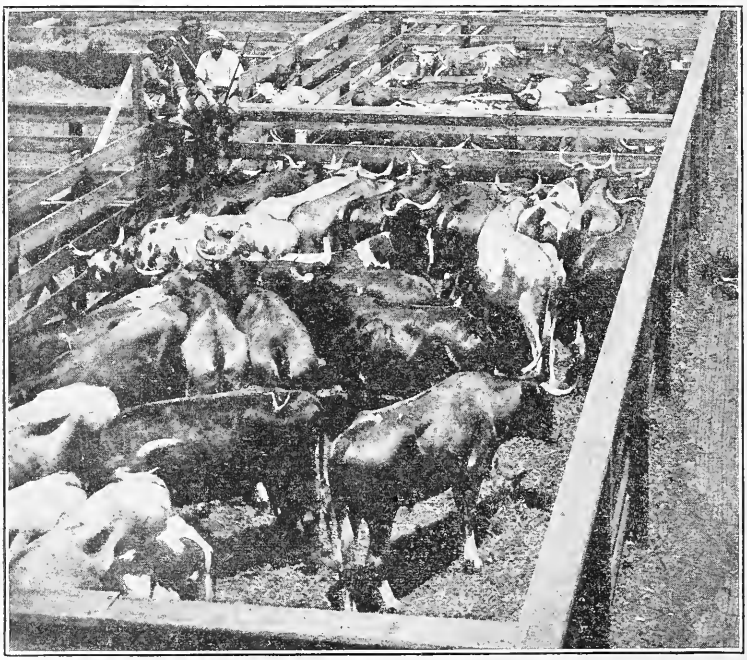
Study the little map on the next page. Get your teacher to help you find the spot on this map where you live.



The white part of the map below the red line shows where people have dipped out the fever ticks. The red spots show where fever ticks kill cattle. The people in some of the red places are now dipping cattle to get rid of ticks this year. (Revised to December 10, 1921.)

All the country that is south of the red line across the top of the map was full of fever ticks up to the year 1906.

These ticks were so dangerous to cattle in tick-free country that the United States Government said that no cattle with fever ticks on them should be shipped out of a ticky State to go to farms where there were no fever ticks. This is called a "quaran-



Cattle in quarantine pens. These cattle are from ticky country. They are kept away from clean cattle.

tine" to prevent the spread of tick fever. The Government made this rule because these fever ticks would give the fever to tick-free cattle and kill them.

This rule makes it harder for owners of ticky cattle to ship their cattle to the big cattle markets in other States. They have to keep their ticky cattle in quarantine cars and pens away from all tick-free cattle until they reach the slaughterhouse.

Ticky cattle bring lower prices per pound than tick-free cattle. It is more trouble and it costs more to ship ticky cattle.

THE TICK IS DIPPED OUT OF THE WHITE SPOTS.

The people living in the counties shown in white below the red line on the map at last got tired of ticks. They asked the United States Department of Agriculture to help them. The Department sent men to show them how to build dipping vats and how to mix the medicine to kill the ticks.

Wherever the people dipped all their cattle regularly they got rid of these ticks.

The white places on the map below the red line show where the people have killed all the fever ticks with this medicine. These counties have been freed from the troublesome quarantine rules. The fever ticks have been driven out from 523,837 square miles of the South.

The red spots on the map show where the people have not yet got rid of fever ticks. There are still 206,015 square miles of red territory to be freed from ticks.

GLAD THEY GOT RID OF TICKS.

The people who live in the white sections on the map are very glad now that they got rid of the fever ticks. They will not allow ticky cattle to be shipped into their clean counties for fear that the cattle ticks will get back on their cattle.

They write letters to the Department of Agriculture saying that they get more milk from their

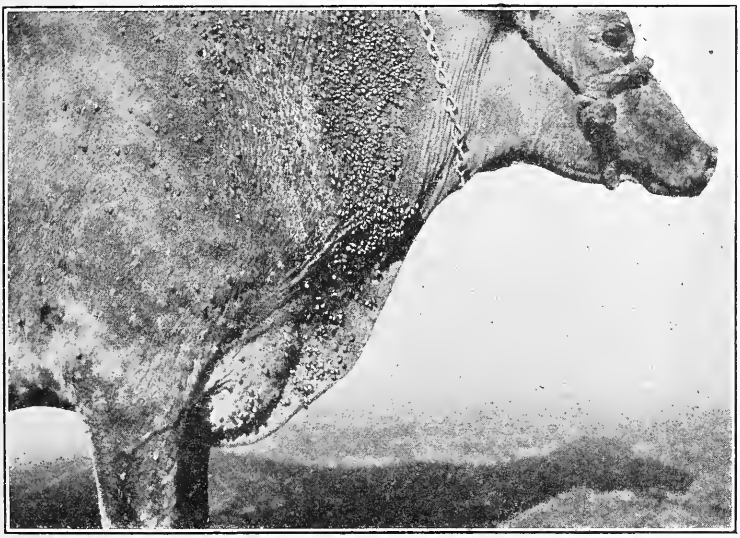
Dairy farm in a southern county which dipped out the fever ticks. Dairy cows like these can live and make money for dairymen where the tick has been dipped out.

cows. They say that their beef animals grow fatter and bigger with the same quantity of feed. They tell how they have improved their stock by bringing in better breeding animals. Their cattle no longer die from tick fever. They get more per pound for their tick-free cattle at the big stock yards. The stock raisers say that cattle are worth $7.50 more per head where the tick has been dipped out.

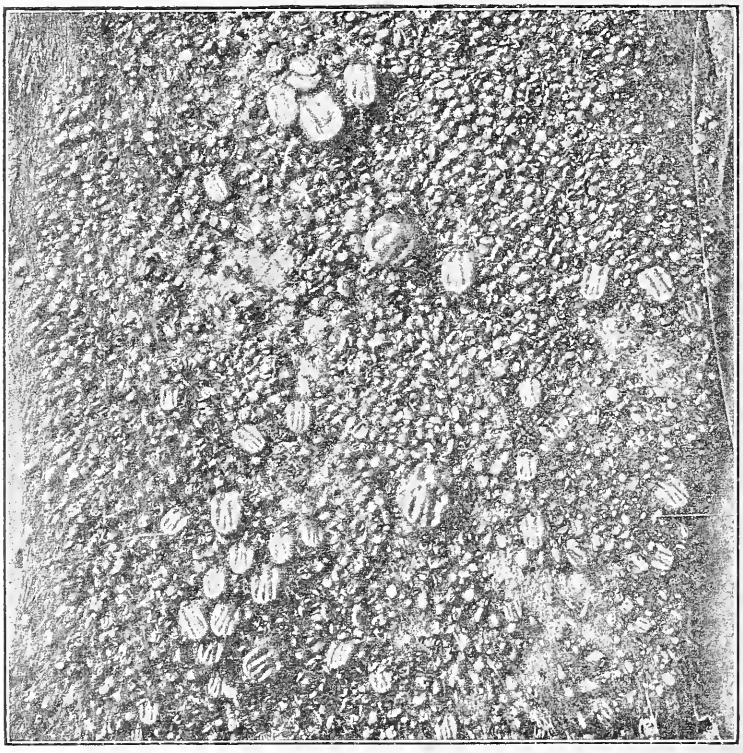
DO YOU LIVE ON A RED SPOT?

Perhaps you live in a place that is marked in red on the map. If you do, there are fever ticks on the cattle in the country around your home.

The next time you see some cattle in the country or at the stock pens go close to them and see whether you can find fever ticks on them. Notice how these ticks keep their heads buried in the hides so that they can suck blood from the animal and poison it with fever.



Don't you feel sorry for this animal?



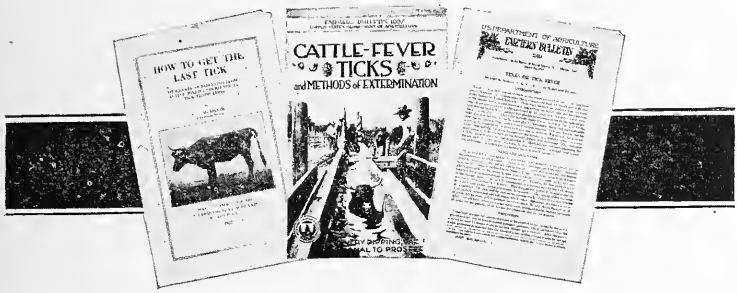
Photograph of ticks on a steer's hide.

Perhaps the people in your red county also are getting tired of ticks. Perhaps they, too, are beginning to build vats and are getting ready to drive their cattle through the medicine.

Ask your father about this. If he says that your county is not getting rid of ticks, then ask him to read this little story carefully. Tell him it means dollars and cents to him whether he owns any cattle or not.

BOOKS ABOUT TICKS FOR GROWN-UPS.

If your parents want to know all about the tick and how to get rid of it, tell them to write a postal card to the United States Department of Agriculture, Washington, D. C., or to your State livestock officials. Without charge, they will send little books for grown people telling about the fever ticks and how to get rid of them in your county.



DIP THAT TICK.

Fever ticks are costing the South more than forty million dollars a year in dead cattle, wasted milk and meat, and lower prices for ticky beef and tick-marked hides. The tick is the worst cattle pest in the South. Help free the South from this pest. Help the South become the great cattle-raising section its climate, soil, and pasture entitle it to be.

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